UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,258	09/15/2003	Shih-Zheng Kuo	9585-0280	9035

73552 7590 11/19/2010

Stolowitz Ford Cowger LLP
621 SW Morrison St
Suite 600
Portland, OR 97205

EXAMINER	
KAU, STEVEN Y	

ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
11/19/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/662,258	KUO, SHIH-ZHENG	
	Examiner	Art Unit	
	STEVEN KAU	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-24 and 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-24 and 31* is/are rejected.

7)☐ Claim(s) *3 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Reopen after Notice of Appeal

1. In view of the Notice of Appeal filed on 08/19/2010, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below. To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41o37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved the reopening of prosecution by signing this Action below.

Status of the Claims

2. Claims 11 and 25-30 have been canceled. Claims 1-10, 12-24 and 31 remain pending for examination in this Action.

Remarks

3. Applicant attempts to invoke 112 6th in claim 19. However, according to the following 3-prong analysis criteria:

(A) the claim limitation must be the phrase “means for” or “step for”;

(B) the “means for” or “steps for” must be modified by functional language; and

(C) the phrase “means for” or “step for” must NOT be modified by sufficient structure, material, or acts for achieving the specified function.

“means for” claim limitations in claim 19 is found modified by sufficient structure. For example, claim limitations recite, "**means for** scanning a document and a calibration pattern at the same time along a scanning path, wherein the means for scanning comprises one or more scan lines” (emphasis added by examiner), where “means for” is modified with sufficient function such “scanning a document and a calibration pattern at the same time along a scanning path, wherein the means for scanning comprises one or more scan lines”; and “**means for** obtaining actual grey level values from the scanned document and obtaining a correctional grey level value from the scanned calibration pattern, wherein the actual gray level value and the correctional gray level value are obtained along the one or more scan lines”, where “means for” is modified with sufficient function such “obtaining actual grey level values from the scanned document and obtaining a correctional grey level value from the scanned calibration pattern, wherein the actual gray level value and the correctional gray level value are obtained along the one or more scan lines”, etc.. The examiner does not consider that

"means for" in claim 19 invokes 112 6th paragraph, and therefore, these claim limitations will be given a broadest reasonable interpretation in light of the supporting disclosure. See MPEP Section 2181.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4, 7 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su (6,233,011) (Su) in view of Irving et al (US 6,658,164) (Irving).

Regarding claim 1.

Su discloses A method performed by a scanner, comprising:

scanning a document to determine a plurality of actual gray level values for a plurality of pixels scanned from the document (**e.g. CIS 16 reading image data, e.g. a plurality of pixels corresponding to Y-axis and moving along in X-axis, col 2, lines 27-32; that is, performing scanning a document, and voltage of the plurality of pixels , or, V_{img} is obtained and white-level value is generated, col 2, lines 9-13, then the corresponding gray scale values of the pixels are also obtained, see col 2, lines 38-40**); scanning a calibration pattern (a **white plate**) while scanning the document to determine a correctional gray level value associated with the calibration pattern

(**scanning the white plate to obtain the average white-level value G'(x), the compensational gray scale values while reading images sequentially by scanning each pixel and output V_{img}, the actual gray scale value, col 3, line 66 to col 4, line 38**); determining a compensational gray level value (**e.g. the average G'(x) gray scale value is determined as discussed above**) with respect to the actual gray level value (**V_{img}, the image voltage which is used to obtain gray scale value as discussed above**) for each of the pixels (**col 3, line 66 to col 4, line 38**), wherein the compensational gray level value is based at least in part on the correctional gray level value (**the average gray scale value, G'(x)**) and the actual gray level values for each of the pixels scanned (**gray-scale value, g(x,y) of each pixel**) from the document (**col 4,lines 38-51**); and compensating for image brightness in a scanned image of the document using the compensational gray level value for each of the pixels (**i.e. the white-value of each pixel is compensated, col 3, line 61 to col 5, line 30**).

Su does not explicitly teach a continuous longitudinal calibration pattern.

In the same field of endeavor, Irving teaches a continuous longitudinal calibration pattern (**referring to Fig. 4, a calibration strips, e.g. strips 406 and 408 are used with brightness function 302 as disclosed in Fig. 6, col 5, lines 35-43, and referring to Fig. 10, for strip orientation, e.g. along the x-axis, or longitudinal direction in x-axis, col 9, lines 41-51**).

Having the method of Su reference and then given the well-established teaching of Irving reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Su reference to include the

known technique of "a continuous longitudinal calibration pattern" taught by Irving. The motivation for doing so would have been to improve gray level compensation for scanner calibration, e.g. calibration can be automatically performed and more accurately in adjusting the pixel value (col 7, lines 28-30).

Regarding claim 4.

Su discloses a method performed by a scanner, comprising:
scanning a document and a continuous longitudinal white pattern, at the same time;
determining a plurality of actual gray level values for a plurality of pixels scanned from the document (**Su teaches this limitation as discussed in claim 1 above**);
determining a correctional gray level value for white based at least in part on the longitudinal white pattern (**Su teaches this limitation as discussed in claim 1 above**);
determining a compensational gray level value with respect to the actual gray level values for each of the pixels based at least in part on the correctional gray level value for white, a theoretical gray level value for white (**e.g. calculating the average white-level G'(x), col 4, lines 28-33**), and the actual gray level values for each of the pixels (**Su teaches this limitation as discussed in claim 1 above**); and
compensating a scanned image of the document using the compensational gray level value for each of the pixels (**Su teaches this limitation as discussed in claim 1 above**).

Su does not explicitly teach a continuous longitudinal white pattern.

Irving teaches a continuous longitudinal white pattern (**Irving teaches this limitation as discussed in claim 1 above**).

Thus, claim 4 is rejected for the same arguments presented above for claim 1.

Regarding claim 7.

Claim 7 recites identical features as claim 4 except for the limitation of black pattern for correctional gray level for black.

Irving teaches the limitation of black pattern for correctional gray level for black (**referring to Fig. 4, Dark Strip 408 is a black or dark gray strip, and dark gray level 704 is shown in Fig. 7B, and dark gray level of 706 is shown in Fig. 7C, col 6, lines 14-66**).

Thus, claim 7 is rejected for the same argument discussed in claims 1 and 4 above.

Regarding claim 31, in accordance with claim 4.

Su discloses wherein the correctional gray level value for white is determined at the same time as at least one of the plurality of actual gray level values (**Su teaches this limitation as discussed in claim 1 above**).

6. Claims 2, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su (6,233,011) (Su) in view of Irving et al (US 6,658,164) (Irving) as applied to claims 1, 4 and 7 above, and further in view of Lee et al (US 6,178,015) (Lee).

Regarding claim 2, in accordance with claim 1.

Su does not teach wherein the scanner comprises: a top; a scanning chassis configured to be movable under the top along a scanning path; and a scanning platform disposed at the top, wherein the scanning platform is configured to support the document above the scanning chassis,

wherein the calibration pattern is positioned along a lateral side of the scanning platform and extends continuously along substantially an entire length of the scanning path.

In the same field of endeavor, Lee discloses a top (**e.g. top housing of Fig. 1, col 2, lines 37-58**); a scanning chassis configured to be movable under the top along a scanning path (**e.g. moving image sensor is configured to move and to read image information, Abstract, col 3, line 65 to col 4, line 7**); and a scanning platform disposed at the top (e**.g. top housing of the scanner, Fig. 1 & col 2, lines 37-58**), wherein the scanning platform is configured to support the document above the scanning chassis (**e.g. scanning side of the document is on the top of the glass facing the transparent window, Fig. 1, col 2,lines 37-58**), wherein the calibration pattern is positioned along a lateral side of the scanning platform (**e.g. optical rulers is along the scanning platform, Fig. 1, col 1 line 66 to 2, line 16**), and extends continuously along substantially an entire length of the scanning path (**e.g. referring to Fig. 1, the test pattern is extents along the scanning path in the surface side of top chassis, col 2, lines 37-58**).

It is also noted that Irving also teaches wherein the calibration pattern is positioned along a lateral side of the scanning platform, and extends continuously along

substantially an entire length of the scanning path (**Irving teaches this feature as discussed in claim 1 above**).

Having the method of Su reference and then given the well-established teaching of Lee and Irving references, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Su reference to include the known technique of "a top; a scanning chassis configured to be movable under the top along a scanning path; and a scanning platform disposed at the top, wherein the scanning platform is configured to support the document above the scanning chassis" taught by Lee. The motivation for doing so would have been to promote an image processing device, e.g. a flabed scanner, to meet the market demands, (col 1, lines 9-13); and then to modify Su to include "the calibration pattern is positioned along a lateral side of the scanning platform, and extends continuously along substantially an entire length of the scanning path" as taught by Irving, and the motivation for doing so would have been to improve gray level compensation for scanner calibration, e.g. calibration can be automatically performed and more accurately in adjusting the pixel value (col 7, lines 28-30) as discussed in claim 1 above, and further, the technique provided could easily be established for one another with predictable results.

Regarding to claim 5, in accordance with claim 4.

Claim 5 recites identical features as claim 2. Thus, arguments similar to that presented above for claim 2 are also equally applicable to claim 5.

Regarding to claim 8, in accordance with claim 7.

Claim 5 recites identical features as claim 4, except for the longitudinal black pattern.

Irving teaches a longitudinal black pattern (**Irving teaches this feature as discussed in claim 7 above**)

Thus, arguments similar to that presented above for claim 4 are also equally applicable to claim 8.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Su (6,233,011) (Su) in view of Irving et al (US 6,658,164) (Irving) as applied to claim 7 above, and further in view of Rykowski et al (US 6,975,775).

Regarding claim 9, in accordance with claim 7.

Su does not teach wherein determining the compensational gray level value for each of the pixels comprises: calculating [each of the actual gray level values with respect to each of the pixels - (the correctional gray level value for black - the theoretical gray level value for black)].

However, in the same field of endeavor, Rykowski teaches calculating [each of the actual gray level values with respect to each of the pixels - (the correctional gray level value for black - the theoretical gray level value for black)] (**referring to Fig. 1, steps of obtaining actual gray level value, developing the correction factor and subtract the correction value, or the theoretical gray level value, col 3, lines 63 to col 4, line 23; thus, the calculation of gray level value to eliminate stray light**

effect and to compensate image pixel value to obtained a true gray level is taught and suggested).

Having the method of Su reference and then given the well-established teaching of Rykowski reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Su reference to include the known technique of "determining the compensational gray level value for each of the pixels comprises: calculating [each of the actual gray level values with respect to each of the pixels - (the correctional gray level value for black - the theoretical gray level value for black)]" taught by Rykowski. The motivation for doing so would have been to the method of Su to eliminate the possible noise signal and to obtain accurate gray level values for each pixel (col 1, lines 19-53), and further, the technique provided could easily be established for one another with predictable results.

7. Claims 10, and 12-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,492,488) in view of Irving et al (US 6,658,164) and Su (6,233,011).

Regarding claim 10.

Liu discloses an apparatus comprises: a scanning element configured to be moveable in a document scanning direction (**referring to Figs. 1A ad 2A, Optical Chassis 12 of Fig. 1a or Optical Chassis 21 of Fig. 2A is driven to move along the holding board 10/20 for scanning or capturing an object image, col 1, lines 22-41, and col 3, lines 55-64, respectively**); a scanning platform (**i.e. transparent holding**

board) configured to support a document (**referring to Fig. 2A, "The transparent holding board 20 is preferably made of glass or acrylic. The scanning object 23 is located above the holding board and the optical chassis 21 is located below the holding board 20 for reading the image data of the scanning object 23", col 3, lines 43-63**); and a processor (**referring to Fig. 2B, 3, and 4, steps of using the calibration parameter to perform compensation and calibration for the captured image, must be processed and controlled by a processor. i.e. as stated in col 6, line 48 to col 7, line 37**).

Liu does not disclose a reference pattern disposed adjacent to the scanning platform, wherein the reference pattern is at least as long as the scanning platform in the document scanning direction; determine actual gray level values for pixels of a scanned image of the document; determine a correctional gray level value based at least in part on a scanned image of the reference pattern; determine a compensational gray level value for the pixels of the scanned image based at least in part on the actual gray level and the correctional gray level: and compensate the scanned image using the compensational gray level value.

In the same field of endeavor, Irving teaches a reference pattern disposed adjacent to the scanning platform, where the reference pattern is at least as long as the scanning platform in the document scanning direction (**Irving teaches this limitation as discussed in claim 1 above**); and

In the same field of endeavor, Su teaches determining a correctional gray level value based at least in part on a scanned image of the reference pattern (**i.e.**

compensational gray level value is calculated for the actual gray level value obtained through image scanning, col 4, lines 34-67); determine a compensational gray level value for the pixels of the scanned image based at least in part on the actual gray level and the correctional gray level (**i.e. compensational gray level value is calculated for the actual gray level value obtained through image scanning, col 4, lines 34-67**); and compensate the scanned image using the compensational gray level value (**i.e. compensated gray-scale value is obtained, col 4, lines 53-65**).

Having an apparatus of Liu reference and then given the well-established teaching of Irving and Su reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Liu reference to include the known technique of “a reference pattern disposed adjacent to the scanning platform, wherein the reference pattern is at least as long as the scanning platform in the document scanning direction” taught by Irving. The motivation for doing so would have been to improve scanner calibration capability and accuracy, (col 7, lines 28-30, Irving), and further, the technique provided could easily be established for one another with predictable results. The to modify the combination of Liu and Irving to include another known technique of "determine a correctional gray level value based at least in part on a scanned image of the reference pattern; determine a compensational gray level value for the pixels of the scanned image based at least in part on the actual gray level and the correctional gray level; and compensate the scanned image using the compensational gray level value" taught by Su reference. The motivation for doing so would have been to improve the quality of scanner calibration by providing gray-scale

compensation to the resolve white-level uniformity problem (col 1, lines 44-60, Su), and further, the technique provided could easily be established for one another with predictable results.

Regarding claim 12, in accordance with claim 10.

Liu does not teach wherein the reference pattern comprises a continuous black pattern elongated in a direction parallel with the document scanning direction and a continuous white pattern elongated in a direction parallel with the document scanning direction and positioned adjacent to the continuous black pattern, and wherein the processor is further configured to determine a black correctional gray level value from the continuous black pattern and determine a white correctional gray level value from the continuous white pattern.

Irving teaches wherein the reference pattern comprises a continuous black pattern elongated in a direction parallel with the document scanning direction and a continuous white pattern elongated in a direction parallel with the document scanning direction and positioned adjacent to the continuous black pattern (**referring to Fig. 4, Bright Strip 406 is adjacent to Dark Strip 408 and parallel to the x-axis, the document scanning direction as shown in Fig. 10**), and wherein the processor is further configured to determine a black correctional gray level value from the continuous black pattern and determine a white correctional gray level value from the continuous white pattern (**referring to Figs. 6 and 7, both bright and dark gray level are determined from the strips, e.g. the process begins with Step 602 where control**

passes to Step 604, thus, must be a processor or controller to execute steps of process in Fig. 6, col 6, lines 18-53, etc..).

Having an apparatus of Liu reference and then given the well-established teaching of Su reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Liu reference to include the known technique of "the reference pattern comprises a continuous black pattern elongated in a direction parallel with the document scanning direction and a continuous white pattern elongated in a direction parallel with the document scanning direction and positioned adjacent to the continuous black pattern, and wherein the processor is further configured to determine a black correctional gray level value from the continuous black pattern and determine a white correctional gray level value from the continuous white pattern" taught by Irving. The motivation for doing so would have been to improve the quality of The motivation for doing so would have been to improve scanner calibration capability and accuracy, (col 7, lines 28-30, Irving), and further, the technique provided could easily be established for one another with predictable results.

Regarding claim 13, in accordance with claim 12.

Liu does not teach wherein the processor is further configured to determine the compensational gray level value based at least in part on the black correctional gray level value, the white correctional gray level value, a theoretical gray level value for black, a theoretical gray level value for white, and the actual gray level values.

Irving teaches wherein the processor is further configured to determine the compensational gray level value based at least in part on the black correctional gray

level value (**referring to Fig. 7C, dark gray level value 706 for pixel 14 is shown**), the white correctional gray level value (**referring to Fig. 7C, bright gray level value 708 for pixel 14 is shown**), a theoretical gray level value for black (**the theoretical value, or correction value, col 7, lines 8-47**), a theoretical gray level value for white (**the theoretical value, or correction value, col 7, lines 8-47**), and the actual gray level values (**for pixel 14, the actual value for dark and bright gray level is 706 and 708, Fig. 7C, col 6, line 63 to col 7, line 3**)

Having an apparatus of Liu reference and then given the well-established teaching of Su reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Liu reference to include the known technique of "wherein the processor is further configured to determine the compensational gray level value based at least in part on the black correctional gray level value, the white correctional gray level value, a theoretical gray level value for black, a theoretical gray level value for white, and the actual gray level values" taught by Irving. The motivation for doing so would have been to improve the quality of The motivation for doing so would have been to improve scanner calibration capability and accuracy, (col 7, lines 28-30, Irving), and further, the technique provided could easily be established for one another with predictable results.

Regarding claim 14, in accordance with claim 10.

Liu does not teach wherein the reference pattern comprises a continuous black pattern, and wherein the processor is further configured to determine a black correctional gray level value from the continuous black pattern.

Irving teaches wherein the reference pattern comprises a continuous black pattern, and wherein the processor is further configured to determine a black correctional gray level value from the continuous black pattern (**Irving teaches this limitation in claim 7 above**).

Thus, claim 14 is rejected for the same reason discussed in claim 7 above.

Regarding claim 15, in accordance with claim 10.

Liu does not teach wherein the scanning element is configured to scan both the reference pattern and the document at the same time.

Su teaches wherein the scanning element is configured to scan both the reference pattern and the document at the same time (**Su teaches this limitation in claim 1 above**).

Thus, claim 15 is rejected for the same reason discussed in claim 1 above.

Regarding claim 16, in accordance with claim 10.

Liu does not teach wherein the reference pattern comprises a continuous white pattern, and wherein the processor is further configured to determine a white correctional gray level value from the continuous white pattern.

Su teaches wherein the reference pattern comprises a continuous white pattern, and wherein the processor is further configured to determine a white correctional gray level value from the continuous white pattern (**Su teaches this limitation in claim 4 above**).

Thus, claim 16 is rejected for the same reason discussed in claim 4 above.

Claim 17 recites identical features as claim 13. thus, claim 17 is rejected for the same reason discussed in claim 13.

Regarding claim 18, in accordance with claim 10.

Liu does not disclose wherein a length of the reference pattern is parallel to the scanning direction and equal to or greater than a length of the scanning platform.

However, Irving teaches wherein a length of the reference pattern is parallel to the scanning direction and equal to or greater than a length of the scanning platform (**Irving teaches this limitation as discussed in claim 1 above**).

Having an apparatus of Liu reference and then given the well-established teaching of Irving reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Liu reference to include the known technique of “a length of the reference pattern is parallel to the scanning direction and equal to or greater than a length of the scanning platform” taught by Irving. The motivation for doing so would have been to improve scanner calibration capability and accuracy, and further, the technique provided could easily be established for one another with predictable results.

Regarding claim 19.

Claim 19 is directed to an apparatus claim which substantially corresponds to operation of the device in claim 10. Thus, claim 19 is rejected as set forth above for claim 10.

Regarding claim 20, in accordance with claim 19.

Claim 20 recites identical features as claim 1. thus, claim 20 is rejected for the same reason discussed in claim 1 above.

Regarding claim 21, in accordance with claim 20.

Regarding claim 21, the structure elements of apparatus claim 12 perform all steps of apparatus claim 21. Thus claim 21 is rejected under 103(a) for the same reason discussed in the rejection of claim 12.

Regarding claim 22, in accordance with claim 20.

Regarding claim 22, the structure elements of apparatus claim 14 perform all steps of apparatus claim 22. Thus claim 22 is rejected under 103(a) for the same reason discussed in the rejection of claim 14.

Regarding claim 23, in accordance with claim 20.

Regarding claim 23, the structure elements of apparatus claim 16 perform all steps of apparatus claim 23. Thus claim 23 is rejected under 103(a) for the same reason discussed in the rejection of claim 16.

Regarding claim 24, in accordance with claim 19.

Claim 24 recites identical features as claim18. Thus, claim 24 is rejected for the same reason discussed in claim 18 above.

Allowable Subject Matter

8. Claims 3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims, with a condition that the base claim is cleared of any objection and rejection set forth above.

With respect to claims 3 and 6, limitations recite, “scanning a second continuous longitudinal calibration pattern while scanning the document to determine a second correctional gray level associated with the calibration pattern, wherein the first correctional gray level is for black, wherein the second correctional gray level is for white, and wherein determining the compensational gray level value for each of the pixels comprises: [(each of the actual gray level values with respect to each of the pixels - the correctional gray level value for black) + (the correctional gray level value for white - the correctional gray level value for black) * (a theoretical gray level value for white - a theoretical gray level value for black)]”, and “wherein determining the compensational gray level value for each of the pixels comprises: calculating [each of the actual gray level values with respect to each of the pixels * (the theoretical gray level value for white + the correctional gray level value for white)]”, respectively. Prior arts in the record, e.g., SU (US 6,233,011), Liu (US 7,492,488), Lee et al (US 6,178,015), Selby (US, 5,404,232), Horiuchi et al (US 6,445,469), and Chien (6,480,306) alone or combined do not teach the claim feature and the examiner did not find prior art teaching the cited limitation. Thus, it is believed a unique feature in the invention and is suggested to be allowed.

CONTACT INFORMATION

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Kau whose telephone number is 571-270-1120 and fax number is 571-270-2120. The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Steven Kau/
Examiner, Art Unit 2625
November 11, 2010

/David K Moore/
Supervisory Patent Examiner, Art Unit 2625